

Having described the invention, I claim the following:

1. An apparatus for helping to protect an occupant of a seat of a vehicle, the apparatus comprising:

a sensor responsive to at least one of a side impact event or a rollover event for providing a crash event signal;

a first vehicle occupant protection device that is inflatable into a first position located beside the seat;

a second vehicle occupant protection device that is inflatable into a second position located forward of the seat; and

a controller responsive to the crash event signal for immediately inflating the first vehicle occupant protection device and, a predetermined time after inflation of the first vehicle occupant protection device, inflating the second vehicle occupant protection device.

2. The apparatus of claim 1 wherein the first vehicle occupant protection device is a side air bag.

3. The apparatus of claim 1 wherein the first vehicle occupant protection device is a rollover air bag.

4. The apparatus of claim 1 wherein the second vehicle occupant protection device is configured to remain in a mostly inflated condition in the second position for an extended period of time.

5. The apparatus of claim 4 wherein the extended period of time is at least about 300 milliseconds.

6. The apparatus of claim 4 further including an inflator associated with the second vehicle occupant protection device, the inflator being adapted to provide inflation fluid to the second vehicle occupant protection device so as to sustain the second vehicle occupant protection device in the inflated condition for the extended period of time.

7. The apparatus of claim 6 wherein the inflator includes first and second actuatable stages, the controller actuating the first actuatable stage to

inflate the second vehicle occupant protection device into the inflated condition and actuating the second actuatable stage so as to sustain the second vehicle occupant protection device in the inflated condition for the extended period of time.

8. The apparatus of claim 4 wherein the second vehicle occupant protection device is a front air bag that is of a sealed design so as to help prevent inflation fluid loss from the front air bag, the front air bag remaining in the inflated condition for the extended period of time.

9. The apparatus of claim 1 further including a precrash sensor for sensing an impending impact event and providing a precrash signal, the controller, in response to initially receiving the precrash signal, inflating the second vehicle occupant protection device, the controller being responsive to a subsequently received crash event signal for inflating the first vehicle occupant protection device.

10. An apparatus for helping to protect an occupant of a seat of a vehicle, the apparatus comprising:

a sensor responsive to at least one of a side impact event or a rollover event for providing a crash event signal;

a first vehicle occupant protection device that is inflatable into a first position located beside the seat;

a second vehicle occupant protection device that is inflatable into a second position located forward of the seat; and

a controller responsive to the crash event signal from the sensor for inflating both the first and second vehicle occupant protection devices.

11. The apparatus of claim 10 further including a sensor that is responsive to a front impact event for providing a front crash signal, the controller, in response to initially receiving the front crash signal, inflating the second vehicle occupant protection device, the controller being responsive to a subsequently received crash event signal for inflating the first vehicle occupant protection device.

12. The apparatus of claim 10 further including a precrash sensor for sensing an impending impact event and providing a precrash signal, the controller, in response to initially receiving the precrash signal, inflating the second vehicle occupant protection device, the controller being responsive to a subsequently received crash event signal for inflating the first vehicle occupant protection device.

13. The apparatus of claim 10 wherein the second vehicle occupant protection device is configured to remain in a mostly inflated condition in the second position for an extended period of time.

14. The apparatus of claim 13 wherein the extended period of time is at least about 300 milliseconds.

15. The apparatus of claim 13 further including an inflator associated with the second vehicle occupant protection device, the inflator being adapted to provide inflation fluid to the second vehicle occupant protection device so as to sustain the second vehicle

occupant protection device in the inflated condition for the extended period of time.

16. The apparatus of claim 13 wherein the inflator includes first and second actuatable stages, the controller actuating the first actuatable stage to inflate the second vehicle occupant protection device into the inflated condition and actuating the second actuatable stage so as to sustain the second vehicle occupant protection device in the inflated condition for the extended period of time.

17. The apparatus of claim 13 wherein the second vehicle occupant protection device is a front air bag that is of a sealed design so as to help prevent inflation fluid loss from the front air bag, the front air bag remaining in the inflated condition for the extended period of time.

18. The apparatus of claim 10 wherein the controller, in response to receiving the crash event signal, inflates the first vehicle occupant protection device and, a short time after inflating the first

vehicle occupant protection device, inflates the second vehicle occupant protection device.

19. An apparatus for helping to protect an occupant of a seat of a vehicle, the apparatus comprising:

a sensor for sensing a vehicle crash condition and for providing a crash event signal;

a first vehicle occupant protection device that is mounted to the vehicle in a position forward of the seat and is inflatable into a first position located forward of the seat; and

a controller responsive to the crash event signal for inflating the first vehicle occupant protection device,

the first vehicle occupant protection device being configured to remain in a mostly inflated condition in the first position for at least about 300 milliseconds.

20. The apparatus of claim 19 further including a second vehicle occupant protection device that is inflatable into a second position located beside the seat, the controller also being responsive to the crash

event signal for inflating the second vehicle occupant protection device.

21. The apparatus of claim 19 wherein the sensor is adapted to provide the crash event signal in response to at least one of a side impact event or a rollover event.

22. The apparatus of claim 21 wherein the controller, in response to receiving the crash event signal, immediately inflates the second vehicle occupant protection device and, a predetermined time after inflation of the second vehicle occupant protection device, inflates the first vehicle occupant protection device.

23. The apparatus of claim 20 wherein the sensor is a precrash sensor adapted to sense an impending impact event and for providing the crash event signal in response to sensing the impending impact event.

24. A method for helping to protect an occupant of a seat of a vehicle, the method comprising the steps of:



sensing at least one of a side impact event or a rollover event and providing a crash event signal;

immediately inflating a first vehicle occupant protection device into a first position located beside the seat; and

inflating, a predetermined time after inflating the first vehicle occupant protection device, a second vehicle occupant protection device into a second position located forward of the seat.

25. The method of claim 24 further including the step of sustaining the second vehicle occupant protection device in a mostly inflated condition in the second position for an extended period of time.

26. The method of claim 25 wherein the step of sustaining the second vehicle occupant protection device in a mostly inflated condition in the second position for an extended period of time further includes the step of sustaining the second vehicle occupant protection device in the mostly inflated condition for at least about 300 milliseconds.

27. The method of claim 24 further including the steps of:

sensing an impending impact event and providing a precrash signal;

inflating the second vehicle occupant protection device in response to initially receiving the precrash signal; and

inflating the first vehicle occupant protection device in response to a subsequently received crash event signal.

28. A method for helping to protect an occupant of a seat of a vehicle, the method comprising the steps of:

sensing at least one of a side impact event or a rollover event for providing a crash event signal;

inflating a first vehicle occupant protection device into a first position located beside the seat; and

inflating a second vehicle occupant protection device into a second position located forward of the seat.

29. The method of claim 28 further including the steps of:

sensing a front impact event and providing a front crash signal;

inflating the second vehicle occupant protection device in response to initially receiving the front crash signal; and

inflating the first vehicle occupant protection device in response to a subsequently received crash event signal.

30. The method of claim 28 further including the steps of:

sensing an impending impact event and providing a precrash signal;

inflating the second vehicle occupant protection device in response to initially receiving the precrash signal; and

inflating the first vehicle occupant protection device in response to a subsequently received crash event signal.

31. The method of claim 28 further including the step of sustaining the second vehicle occupant

protection device in a mostly inflated condition in the second position for an extended period of time.

32. The method of claim 31 wherein the step of sustaining the second vehicle occupant protection device in a mostly inflated condition in the second position for an extended period of time further includes the step of sustaining the second vehicle occupant protection device in the mostly inflated condition for at least about 300 milliseconds.

33. A method for helping to protect an occupant of a seat of a vehicle, the method comprising the steps of:

sensing a vehicle crash condition and providing a crash event signal;

inflating a first vehicle occupant protection device into a first position located forward of the seat; and

sustaining the first vehicle occupant protection device in a mostly inflated condition in the first position for at least about 300 milliseconds.

34. The method of claim 33 further including the step of inflating a second vehicle occupant protection device into a second position located beside the seat.

35. The method of claim 33 wherein the step of sensing a vehicle crash condition and providing a crash event signal further includes the step of sensing at least one of a side impact event or a rollover event.

36. The method of claim 35 further including the step of delaying a predetermined time after inflation of the second vehicle occupant protection device prior to inflating the first vehicle occupant protection device.